

## WHAT IS CLAIMED IS:

1. A non-circular recording medium on which a recording track is formed, the recording track comprising an optically readable or writable recording area, wherein:

5           the recording track comprises a discontinuity where no data is writable or readable.

2. The non-circular recording medium according to claim 1, wherein the recording medium has a form such as a triangle, square, polygon, ellipse  
10       or star.

3. The non-circular recording medium according to claim 1, wherein the recording track comprises a read only area where data is beforehand recorded and an additionally writing area where data is additionally  
15       writable.

4. The non-circular recording medium according to claim 1, wherein the recording track comprises either a plurality of concentric tracks or a spiral track.  
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5. A non-circular recording medium on which a spiral track or a plurality of non-circular recording tracks are formed, wherein:

          the spiral track or at least one of the plurality of non-circular recording tracks comprises a discontinuity; and

25           the spiral track or the plurality of recording tracks comprises a read only area where data is recorded beforehand, an additionally writing area where data is additionally rewritable, and a track information recording

area where information on disposition of the spiral track or plurality of recording tracks is recorded.

6. A recording medium controlling apparatus for reading/writing  
 5 data from/to a recording data area formed on a non-circular recording medium while rotating the recording medium, said apparatus comprising:  
 detecting means for detecting a discontinuity in the recording tracks due to the non-circularity of the recording medium; and  
 combining means for combining data on recording data areas  
 10 present before and after the discontinuity in a rotating direction of the recording medium and detected by said detecting means so that these data continue.

7. The recording medium controlling apparatus according to claim 6,  
 15 wherein said detecting means comprises optical detecting means for detecting the discontinuity optically,

8. The recording medium controlling apparatus according to claim 6,  
 wherein said detecting means comprises light cutoff detecting means for  
 20 detecting the discontinuity depending on if light applied to the recording medium during rotation of the recording medium is cut off or not.

9. The recording medium controlling apparatus according to claim 6,  
 wherein said detecting means comprises position information detecting  
 25 means for detecting the discontinuity based on information on a position of the discontinuity recorded on the recording medium or in an access control driver.

10. A recording medium controlling apparatus for reading recorded data from a recording section formed on a non-circular recording medium while rotating the recording medium, said apparatus comprising:

5        detecting means for detecting a non-circular area recording section due to a non-circular shape of the recording medium; and

          controlling means for combining data on portions of the non-circular recording data area detected by said detecting means and present before and after the non-circular area during rotation of the recording medium.

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11. A recording medium controlling apparatus for reading recorded data from a recording section formed on a non-circular recording medium while rotating the recording medium, said apparatus comprising:

          detecting means for detecting effective data reading areas and an  
15        ineffective data reading area between the effective data reading areas present due to the shape of the recording medium when data is read from the recording areas; and

          data combining means, responsive to the data reading being completed, for deleting data in the ineffective data reading area detected by  
20        said detecting means, and for combining the data recorded in the effective data recording areas.

12. A non-circular recording medium controlling apparatus for reading/writing data from/to a non-circular recording medium on which a  
25        read only area where data is recorded beforehand and an additionally writing area where data is additionally writable are provided, said apparatus comprising:

driving means for rotating the non-circular recording medium;

optical reading means for irradiating a recording area that includes the read only area and the additionally writing area on the non-circular recording medium, rotated by said driving means, with light and for  
5 acquiring data recorded on the recording area from light reflected by the recording area;

irradiating means for irradiating with light a predetermined position on the non-circular recording medium;

detecting means for detecting a reflection of the light, irradiated by  
10 said irradiating means, from the predetermined position on the non-circular recording medium; and

control means for controlling the irradiation of the light by said optical reading means based on a result of the detection by said detecting means.

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13. The non-circular recording medium controlling apparatus according to claim 12, further comprising:

additionally writing means for irradiating the additionally writing area of the non-circular recording medium with light to additionally write  
20 data to the additionally writing area; and wherein:

said control means controls the irradiation of light by said additionally writing means based on a result of the detection by said detecting means.

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14. A non-circular recording medium controlling apparatus for reading/writing data from/to a non-circular recording medium on which a read only area where data is recorded beforehand and an additionally

writing area where data is additionally writable are provided, said apparatus comprising:

driving means for rotating the non-circular recording medium;

5 irradiating means for irradiating with light a data recording track that involves the read only area and the additionally writing area on the non-circular recording medium being rotated;

sensing means for sensing a reflection of the light, irradiated by said irradiating means, from the data recording track on the non-circular recording medium;

10 track shape detecting means for detecting the shape of the data recording track based on a result of the sensing by said sensing means; and

reading means for reading data recorded on the data recording track based on a result of the detection by said track shape detecting means.

15 15. The non-circular recording medium controlling apparatus according to claim 14, wherein:

said reading means comprises:

20 optical reading means for irradiating with light a predetermined position on the non-circular recording medium and for acquiring data from the reflection of the light from the predetermined position; and

read controlling means, responsive to said track shape detecting means detecting that the data recording track has the shape of a circle that in turn has a discontinuity, for stopping operation of said optical reading means on the discontinuity and for storing data from a portion of the data recording track involving the remainder of the circle acquired by said  
25 optical reading means.

16. A method of controlling a non-circular recording medium that comprises a read only area where data is stored beforehand and an additionally writing area where data is writable additionally, the method comprising the steps of:

- 5           rotating the non-circular recording medium;
- irradiating with light a recording area of the non-circular recording medium being rotated in said rotating step;
- sensing a reflection of the irradiated light from the non-circular recording medium;
- 10          controlling the irradiation of light on the recording area of the non-circular recording medium based on a result of the sensing of the reflection of the irradiated light; and
- acquiring data recorded in the recording area from the reflection of the light with which the recording medium was irradiated in the irradiating
- 15          step.

17. A method of controlling a non-circular recording medium that comprises an optically readable recording area that, in turn, comprises a spiral data recording track or a plurality of concentric data recording tracks,
- 20   the method comprising the steps of:
  - rotating the non-circular recording medium;
  - irradiating with light one of the data recording tracks on the non-circular recording medium being rotated in said rotating step;
  - determining the shape of the data recording track based on a result
  - 25          of the sensing in said sensing step;
  - sensing a reflection from that data recording track; and
  - reading data recorded on the recording track based on a result of the

determination in said determining step.

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